

IN THE CLAIMS:

1. (CURRENTLY AMENDED) A method of transmitting data packets in an uplink from a plurality of source user equipments to a base station, the data packets being for
5 | onward transmission to a plurality of destination user equipments, the method comprising ~~the~~
| ~~steps of:~~
| determining a measure of a quality of service from the base station to a destination
| user equipment; and
| scheduling uplink transmissions from the source user equipments to the base station in
10 | dependence on the measure of a quality of service.

2. (CURRENTLY AMENDED) ~~A~~The method according to claim 1, wherein the
| measure of a quality of service is determined at the base station.

- 15 | 3. (CURRENTLY AMENDED) ~~A~~The method according to claim 2, wherein the
| base station transmits an indication of the quality of service to a user equipment.

4. (CURRENTLY AMENDED) ~~A~~The method according to claim 2, wherein the
| base station transmits to a user equipment an indication of a transmission format to be used
20 | by the user equipment.

5. (CURRENTLY AMENDED) ~~A~~The method according to claim 1 ~~any of the~~
| ~~preceding claims~~, wherein the base station determines a measure of a quality of service for
| each of the plurality of destination user equipments.
25 |

6. (CURRENTLY AMENDED) ~~A~~The method according to claim 5, wherein the
| base station determines a credit value for each destination user equipment, the credit value
| being based on the measures of the quality of service, and the base station transmits each
| credit value to the corresponding source user equipment.
30 |

7. (CURRENTLY AMENDED) ~~A~~The method according to claim 6, wherein the
| credit value for each destination user equipment is obtained by comparing the measure of the
| quality of service for that destination user equipment with measures of the quality of service
| for other destination user equipments.

8. (CURRENTLY AMENDED) A The method according to claim 1 ~~any of the preceding claims~~, wherein a plurality of different measures of a quality of service are determined for each of the plurality of destination user equipments.

9. (CURRENTLY AMENDED) A The method according to claim 1 ~~any of the preceding claims~~, wherein at least one of the following measures of the quality of packet delivery from the base station to a destination user equipment is determined:

- (a) throughput ratio
- (b) ratio of satisfied packets
- (c) base station buffer occupancy.

10. (CURRENTLY AMENDED) A The method according to claim 8 ~~or 9~~, wherein, for each destination user equipment, the base station compares each of the measures of the quality of service for that destination user equipment with the corresponding measures of the quality of service for other destination user equipments, to give a plurality of relative measures.

11. (CURRENTLY AMENDED) A The method according to claim 10, wherein the base station obtains at least one of the following relative measures:

- (a) distance from average throughput ratio
- (b) distance from minimum throughput ratio
- (c) distance from minimum quality of service
- (d) distance from minimum buffer length.

12. (CURRENTLY AMENDED) A The method according to claim 10 ~~or 11~~, wherein the base station combines the plurality of relative measures for each destination user equipment to give a single credit value for that destination user equipment.

13. (CURRENTLY AMENDED) A The method according to claim 1 ~~any of the preceding claims~~, wherein a source user equipment receives a credit value based on the measure of the quality of service, and determines a time and/or rate of packet transmission based on the credit value.

14. (CURRENTLY AMENDED) A-The method according to claim 13, wherein the source user equipment determines the time and/or rate of packet transmission based additionally on a measurement of radio channel conditions.

5 15. (CURRENTLY AMENDED) A-The method according to claim 13-~~or~~ 14, wherein the source user equipment determines the time and/or rate of packet transmission based additionally on the type of service.

10 16. (CURRENTLY AMENDED) A-The method according to claim 1 ~~any of the preceding claims~~, wherein uplink transmissions are scheduled using rate scheduling.

15 17. (CURRENTLY AMENDED) A-The method according to claim 1 ~~any of the preceding claims~~, wherein uplink transmissions are scheduled using hybrid rate-time scheduling.

20 18. (CURRENTLY AMENDED) A-The method according to claim 1, 16 or 17 further comprising ~~a step of switching from scheduling uplink transmissions using one to the other of rate scheduling and hybrid rate-time scheduling to scheduling uplink transmissions using the other of rate scheduling and hybrid rate-time scheduling.~~

25 19. (CURRENTLY AMENDED) A-The method according to claim 1 ~~any of the preceding claims~~, wherein the rate of uplink transmission is varied by adjusting the modulation and coding scheme level.

30 20. (CURRENTLY AMENDED) A-The method according to claim 1 ~~any of the preceding claims~~, wherein the rate of uplink transmission is varied by adjusting the intervals at which the uplink transmissions take place.

21. (CURRENTLY AMENDED) A-The method according to claim 1 ~~any of the preceding claims~~, wherein a source user equipment receiving an indication of a good quality of service transmits data packets to the base station at a lower rate than would otherwise be the case.

22. (CURRENTLY AMENDED) A-The method according to claim 1~~any of the preceding claims~~, wherein a source user equipment receiving an indication of a poor quality of service transmits data packets to the base station at a higher rate than would otherwise be the case.

5

23. (CURRENTLY AMENDED) A-The method according to claim 1~~any of the preceding claims~~, wherein a source user equipment receives credit values based on measures of the quality of service, and stores a history of the credit values.

10

24. (CURRENTLY AMENDED) A-The method according to claim 23, wherein a user equipment with a worsening history of credit values transmits data packets to the base station at a higher rate than would otherwise be the case.

15

25. (CURRENTLY AMENDED) A-The method according to claim 23-~~or~~ 24, wherein a user equipment with an improving history of credit values transmits data packets to the base station at a lower rate than would otherwise be the case.

20

26. (CURRENTLY AMENDED) A-The method according to claim 1~~any of the preceding claims~~, wherein the base station operates a scheduling mechanism for downlink transmissions.

25

27. (CURRENTLY AMENDED) A-The method according to claim 1~~any of the preceding claims~~, wherein the base station transmits the data packets directly to the plurality of destination user equipments.

28. (CURRENTLY AMENDED) A-The method according to ~~any of claims 1, to 26~~ wherein the base station transmits the data packets to the plurality of destination user equipments via a network.

30

29. (CURRENTLY AMENDED) A-The method according to claim 1~~any of the preceding claims~~, wherein a new credit value is periodically determined and sent to the source user equipment.

30. (CURRENTLY AMENDED) A base station for receiving data packets in an uplink from a plurality of source user equipments for onward transmission to a plurality of destination user equipments, the base station comprising:

~~a means for determining~~ unit which determines a measure of a quality of service from the base station to a destination user equipment;

~~a means for producing~~ unit which produces a credit value based on the measure of the quality of service; and

~~a means for transmitting~~ unit which transmits the credit value to a source user equipment.

31. (CURRENTLY AMENDED) A base station for receiving data packets in an uplink from a plurality of source user equipments for onward transmission to a plurality of destination user equipments, the base station comprising:

~~a means for determining~~ unit which determines a measure of a quality of service from the base station to a destination user equipment;

~~a means for determining~~ unit which determines, based on the measure of a quality of service, a transmission format to be used by a user equipment in scheduling uplink transmissions from the user equipment to the base station; and

~~a means for transmitting~~ unit which transmits to the user equipment an indication of the transmission format to be used by the user equipment.

32. (CURRENTLY AMENDED) A user equipment for transmitting data packets in an uplink to a base station for onward transmission to a plurality of destination user equipments, the user equipment comprising:

~~a means for receiving~~ unit which receives from the base station a credit value, the credit value being an indication of the quality of service from the base station to a destination user equipment; and

~~a means for scheduling~~ unit which schedules uplink transmissions from the user equipment to the base station in dependence on the credit value.

33. (CANCELLED) ~~A communications system comprising a base station according to claim 30 or 31 and a plurality of user equipments according to claim 32.~~

34. (NEW) A communications system comprising:

a base station for receiving data packets in an uplink from a plurality of source user equipments for onward transmission to a plurality of destination user equipments, the base station comprising:

a determining unit which determines a measure of a quality of service from the base station to a destination user equipment;
a producing unit which produces a credit value based on the measure of the quality of service; and
a transmitting unit which transmits the credit value to a source user equipment; and

a plurality of user equipments, each said user equipment being adapted to transmit data packets in an uplink to a base station for onward transmission to a plurality of destination user equipments, and each said user equipment comprising:

a receiving unit which receives from the base station said credit value, the credit value being an indication of the quality of service from the base station to a destination user equipment; and
a scheduling unit which schedules uplink transmissions from the user equipment to the base station in dependence on the credit value.

35. (NEW) A communications system comprising:

a base station for receiving data packets in an uplink from a plurality of source user equipments for onward transmission to a plurality of destination user equipments, the base station comprising:

a determining unit which determines a measure of a quality of service from the base station to a destination user equipment;
a producing unit which produces a credit value based on the measure of the quality of service; and
a transmitting unit which transmits the credit value to a source user equipment; and

a plurality of user equipments, each said user equipment being adapted to transmit data packets in an uplink from a plurality of source user equipments for onward transmission to a plurality of destination user equipments, and each said base station comprising:

a determining unit which determines a measure of a quality of service from the base station to a destination user equipment;

5

a determining unit which determines, based on the measure of a quality of service, a transmission format to be used by a user equipment in scheduling uplink transmissions from the user equipment to the base station; and
a transmitting unit which transmits to the user equipment an indication of the transmission format to be used by the user equipment.